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09/760,137	01/12/2001	Robert M. Lane	SUN-P5060-RJL	2261

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DAVIS, CA 95616

EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 01/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

SUN MICROSYSTEMS

# Office Action Summary

Application No.

09/760,137

Applicant(s)

LANE, ROBERT M.

Examiner

Etienne P LeRoux

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 9 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,440,750 issued to Kitai et al (hereafter Kitai '750).

Claims 1, 9 and 17:

Kitai '750 discloses a method for using empirical measurements of accesses to synchronization points within an application to construct a performance model for the application, comprising:

- ❑ modifying the application to record statistics related to the synchronization points within the application;
- ❑ running the application to produce the statistics related to synchronization points;
- ❑ constructing the performance model based upon the statistics wherein the performance model is a queuing system model [Fig 8, 1612 and col 18, lines 54-61] in which synchronization points

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in the application are represented by service centers [Fig 8, 1630, 1640, 1650 and col 18, line 54 through col 19, line 17] in the queuing system model;

□ using the performance model to predict a performance of the application [Fig 1, 150 and col 14, lines 27-42]

4. Claims 1-4, 7-12, 15-20, 23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat No 6,549,944 issued to Weinberg et al (hereafter Weinberg '944).

Claims 1, 9 and 17:

Weinberg '944 discloses a method for using empirical measurements of accesses to synchronization points within an application to construct a performance model for the application, comprising:

- modifying the application to record statistics related to the synchronization points within the application [
- running the application to produce the statistics related to synchronization points [col 5, lines 40-50]
- constructing the performance model based upon the statistics, wherein the performance model is a queuing system model [Fig 9, 120/122 and col 20, lines 26-34] in which synchronization points in the application are represented by service centers [HTML home page per col 20 lines 54-67]
- using the performance model to predict a performance of the application [Figs 9 and 10 and col 20, lines 26-40].

Claims 2, 10 and 18:

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Weinberg '944 discloses wherein using the performance model to predict the performance involves numerically solving the analytic model to predict the performance for the application [abstract].

Claims 3, 11 and 19:

Weinberg '944 discloses wherein constructing the performance model based upon the statistics involves constructing a simulation model for the application; and wherein using the performance model to predict the performance involves running the simulation model to predict the performance for the application [abstract].

Claims 4, 12 and 21:

Weinberg '944 discloses wherein modifying the application involves compiling the application with a profiling option in order to record the statistics related to the synchronization points [col 20, lines 35-40].

Claims 7, 15 and 23:

Weinberg '944 discloses wherein the statistics include a directed call graph specifying an ordering of function calls [Figs 7 and 8].

Claims 8, 16 and 24:

Weinberg '944 discloses wherein constructing the performance model involves constructing a queuing model, wherein each synchronization point is a service center for jobs representing processes that circulate between service centers in a manner specified by the directed call graph [Fig 7].

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberg '944.

Claims 5, 13 and 21:

Weinberg '944 discloses the elements of claim 1 as noted above.

Furthermore, Weinberg '944 discloses recording statistics during system calls that operate on the synchronization points [col 2, lines 30-40]

Weinberg '944 fails to disclose wherein modifying the application involves modifying the executable code of the application.

Official Notice is taken that modifying the application involves modifying the executable code of the application is well-known and expected in the art.

The ordinarily skilled artisan would have been motivated to modify Weinberg '944 as above or the purpose of providing machine-executable code.

7. Claims 6, 14 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberg '944 in view of Pub No US 2003/0158885 issued to Sager (hereafter Sager '885) and further in view of US Part No 4,621,318 issued to Maeda (hereafter Maeda '318).

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Claims 6, 14 and 22:

Weinberg '944 discloses the elements of claim 1 as noted above.

Weinberg fails to disclose an identifier for a calling function; an identifier for a mutual exclusion variable; a time spent holding the mutual exclusion variable.

Sager '885 discloses an identifier for a calling function; an identifier for a mutual exclusion variable; a time spent holding the mutual exclusion variable [paragraph 58].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Weinberg '944 to include an identifier for a calling function; an identifier for a mutual exclusion variable; a time spent holding the mutual exclusion variable as taught by Sager '885.

The ordinarily skilled artisan would have been motivated to modify Weinberg '944 as above for the purpose of determining elapsed time so that performance may be determined.

The combination of Weinberg '944 and Sager '885 discloses the elements of claims 1 and 6 as noted above.

The combination of Weinberg '944 and Sager '885 fails to disclose a frequency of accesses to the mutual exclusion variable.

Maeda '318 discloses a frequency of accesses to the mutual exclusion variable [Fig 3]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Weinberg '944 and Sager '885 to include a frequency of accesses to the mutual exclusion variable as taught by Maeda '318.

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The ordinarily skilled artisan would have been motivated to modify the combination of Weinberg '944 and Sager '885 as above for the purpose of improving the invention by reducing the frequency of access to the memory device [Fig 3].

### ***Response to Arguments***

Applicant's arguments filed 11/6/2003, have been fully considered but they are not persuasive.

Applicant states on page 8, "In contrast, the present invention is directed toward constructing a performance model, wherein the performance model is a queuing system model in which synchronization points in the application are represented by service centers in the queuing system model (see page 9, lines 3-5 of the instant application). there is nothing within Kitai or Weinberg, either explicit or implicit, which would suggest constructing a performance model, wherein the performance model is a queuing system model in which synchronization points in the application are represented by service centers in the queuing system model.

Examiner is not persuaded. Kitai discloses a dispatching queue in column 18, lines 54-61:

In FIG. 8, reference numeral 1610 shows that an operating system (OS) is stored in the main storage. Numeral 1612 denotes a **dispatching queue** elements in each of which the address of the TCB (task control block) of dispatchable tasks is stored.

Furthermore, Kitai discloses the following in column 21, lines 62-65:

The details of the processing 1060 when a task registered in the **dispatching queue** 1612 due to the generation of a CW interruption is re-dispatched will be explained in reference with FIG. 9C.



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Kitai discloses service centers in col 18, line 54 through column 19, line 17 as below:

In FIG. 8, reference numeral 1610 shows that an operating system (OS) is stored in the main storage. Numeral 1612 denotes a dispatching queue elements in each of which the address of the TCB (task control block) of dispatchable tasks is stored. Numerals 1620 and 1621 denote job control blocks in which control information for each job is stored. One job control block is produced for one job. Numerals 1630, 1640 and 1650 denote task control blocks (hereinafter referred to as TCB) in which control information for each task including the base address of a program area of the task and a saving area of the task is stored. The block 1630 is a TCB for an originating task, the block 1640 a TCB for a sub-task 0, and the block a TCB for a sub-task 1. One TCB is produced for one task. In the case where multitasking is performed with one job being divided into a plurality of tasks, a plurality of TCB's 1630, 1640 and 1650 are produced for one job control block 1620. Numerals 1631, 1641 and 1651 denote program areas of the originating task, the sub-task 0 and the sub-task 1, numerals 1632, 1642 and 1652 local data areas or characteristic data areas of the originating task, the sub-task 0 and the sub-task 1, and numeral 1660 a common data area or a data area common to the originating task, the sub-task 0 and the sub-task 1. Data used for synchronization between tasks is placed in the common data area 1660. Numeral 1670 denotes a saving area of the task. The above is not different from the known processing by OS.

Above task control blocks 1630, 1640 and 1650 disclosed by Kitai read on the claimed service centers.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (703) 305-0620.

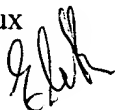
The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (703) 308-1436.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Etienne LeRoux

1/7/2004



SAFET METJAHIC  
SUPERVISORY PATENT EXAMINER  
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